

Fig. 1a

BASIC LS-APGD SOURCE OPERATION

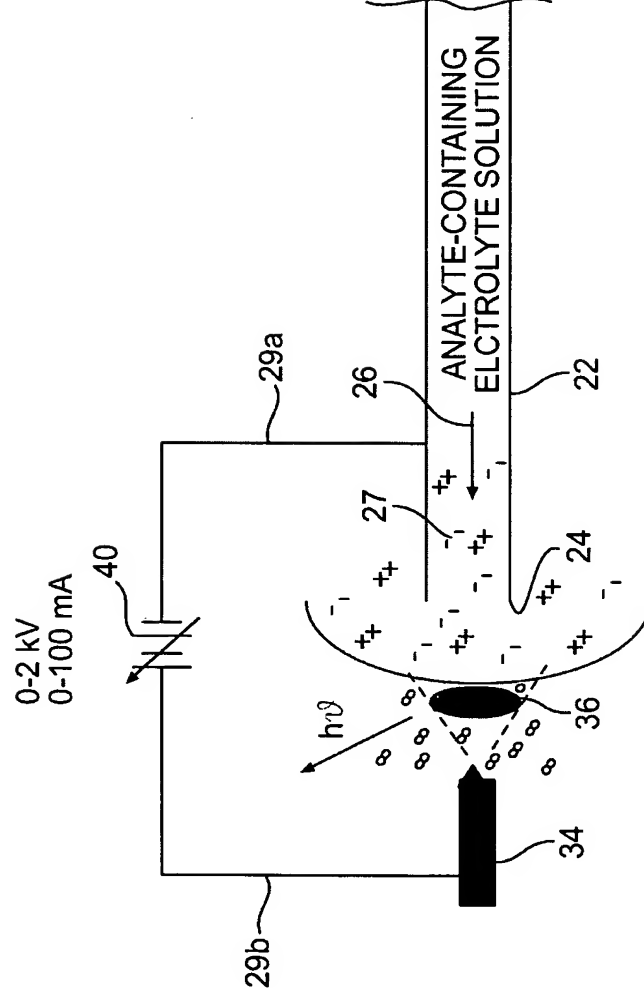


Fig. 1b

PROPOSED IMPLEMENTATION OF LS-APGD
WITH MICROFLUIDIC DEVICES

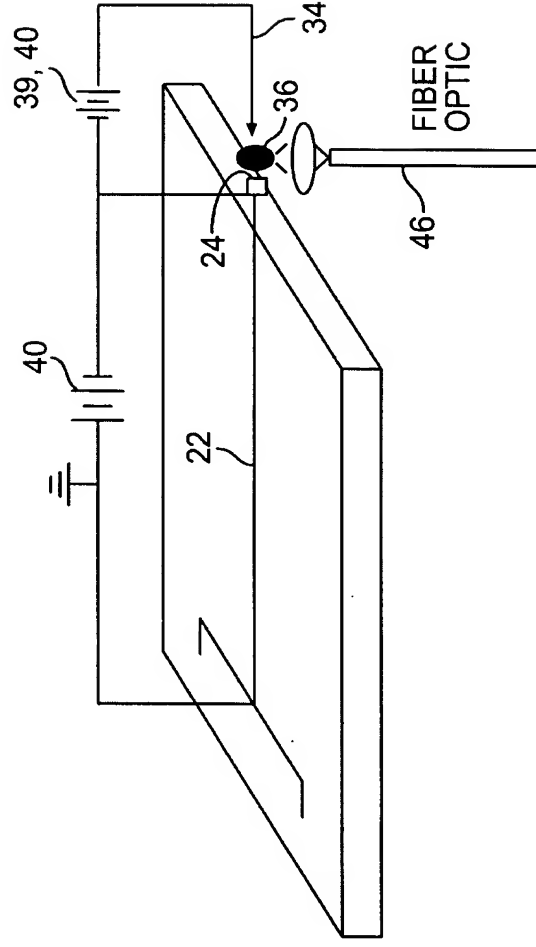


Fig. 1c

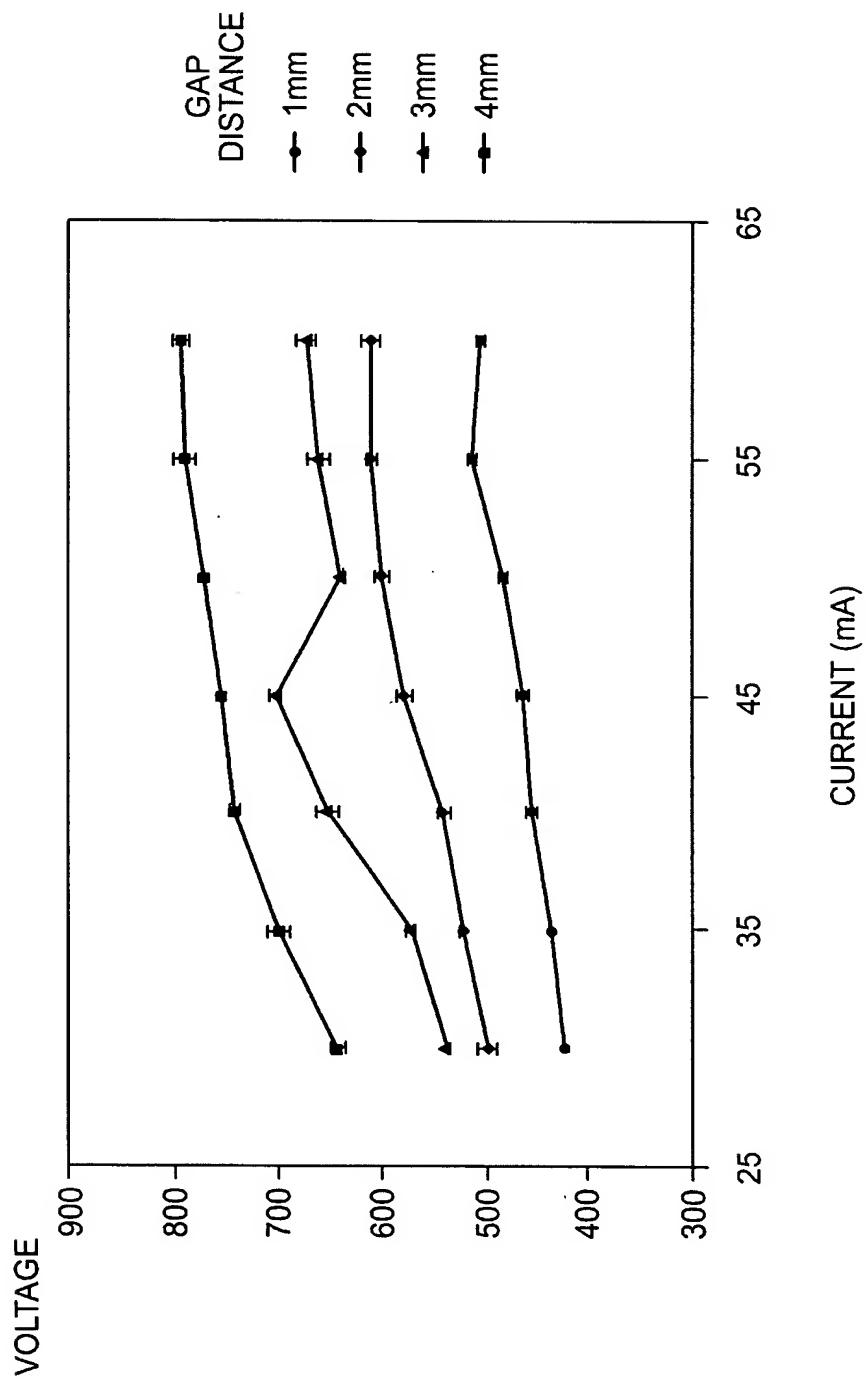


Fig. 2a

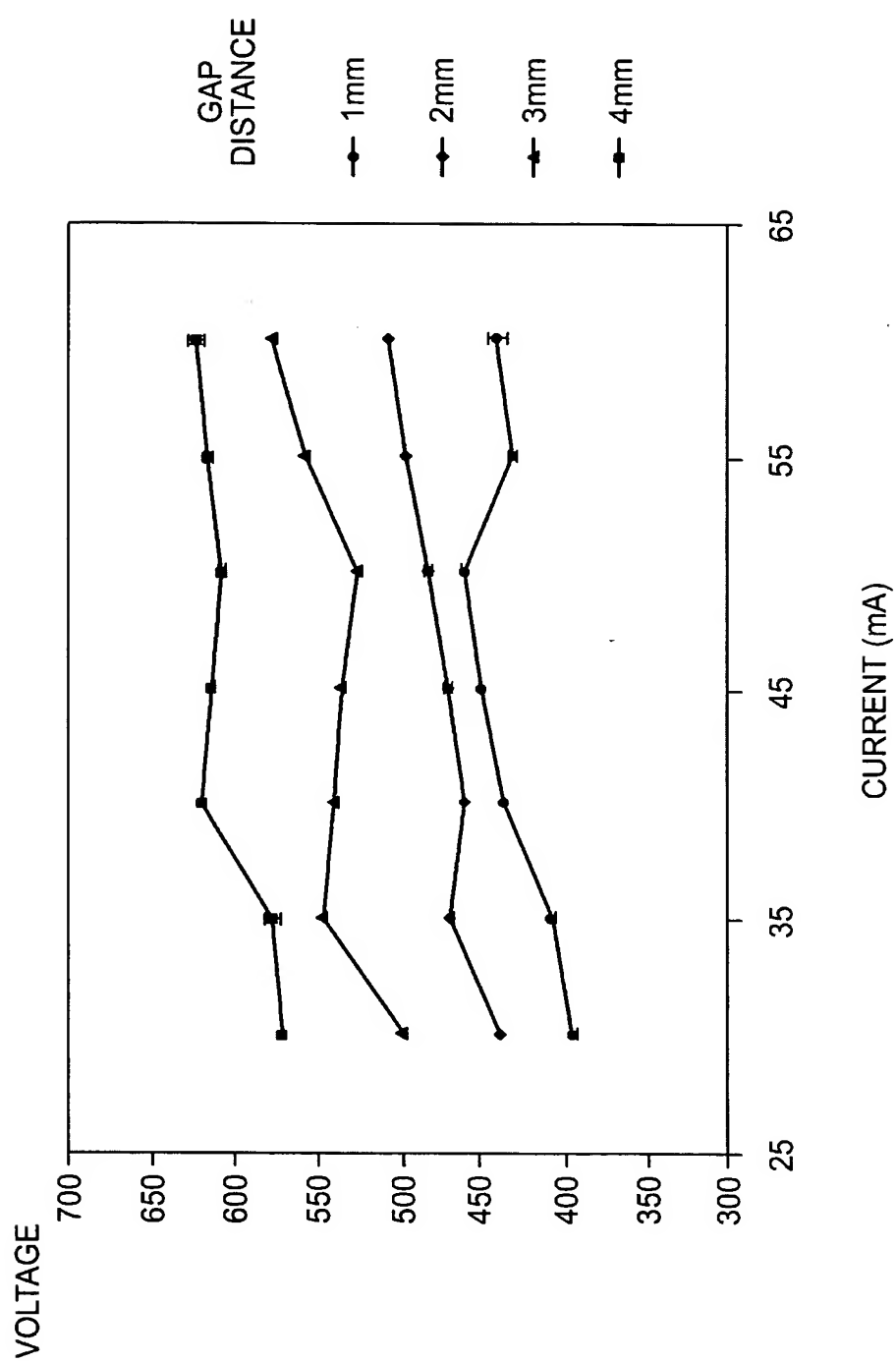


Fig. 2b

REPLACEMENT SHEET

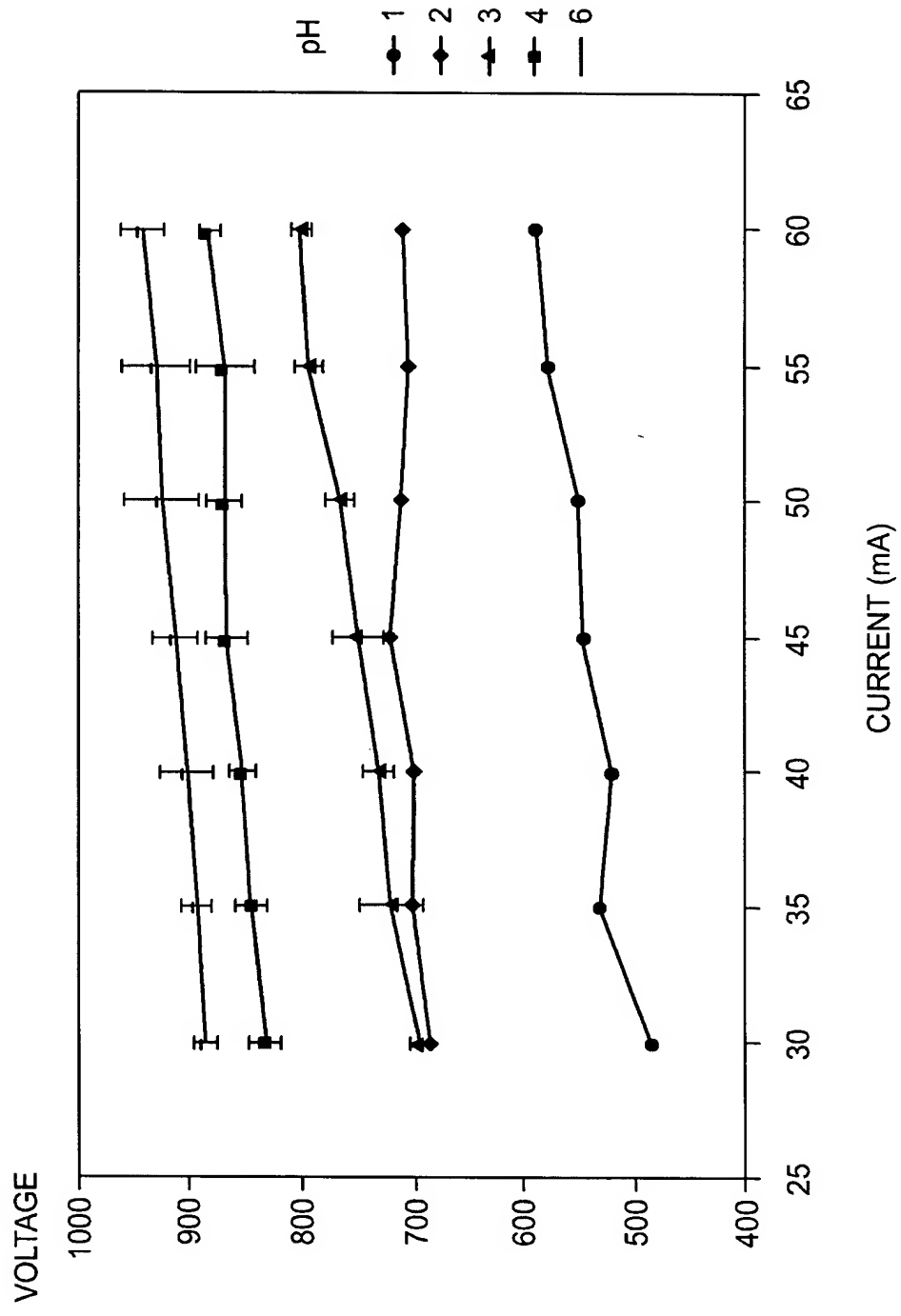


Fig. 3a

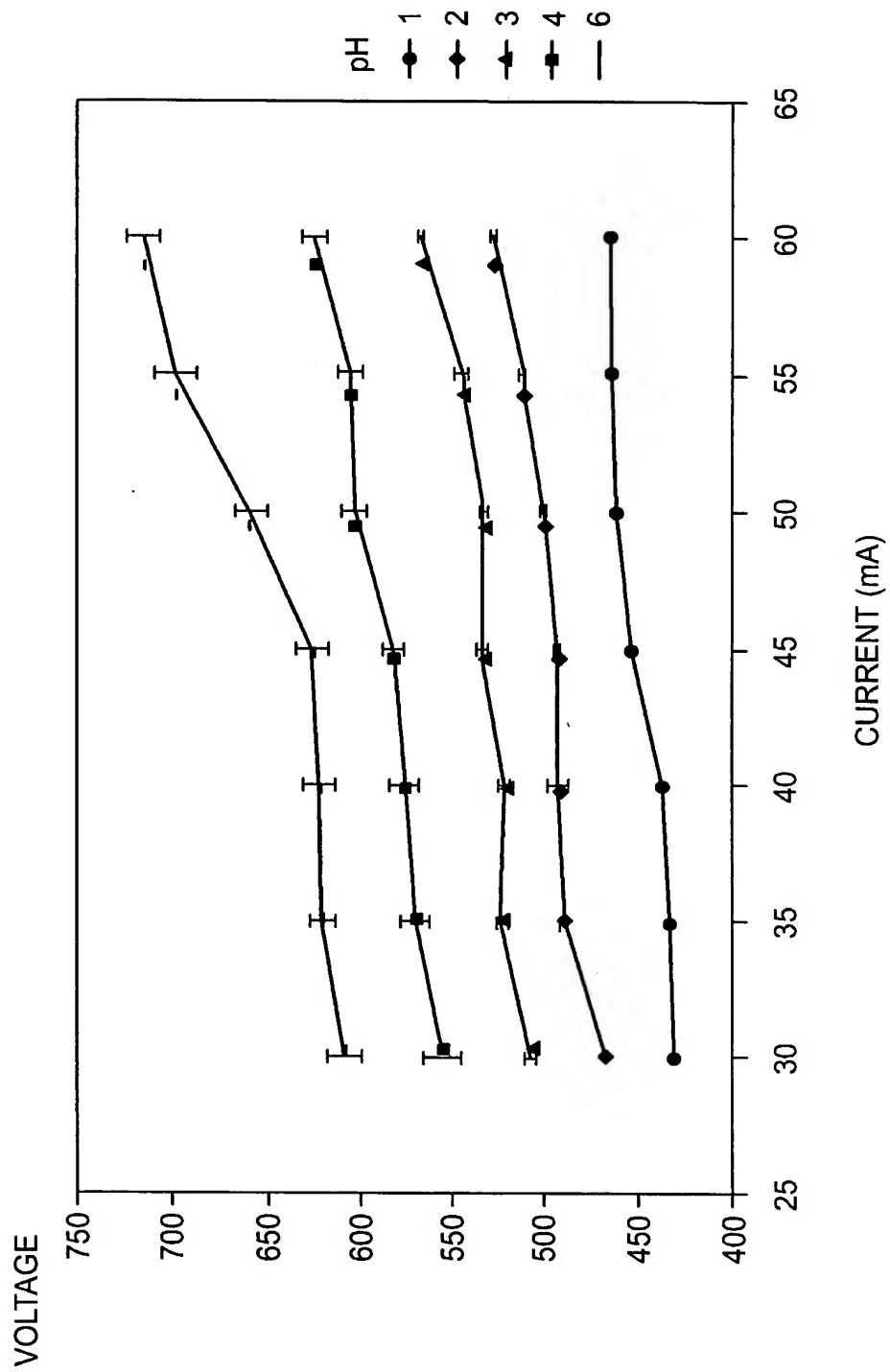


Fig. 3b

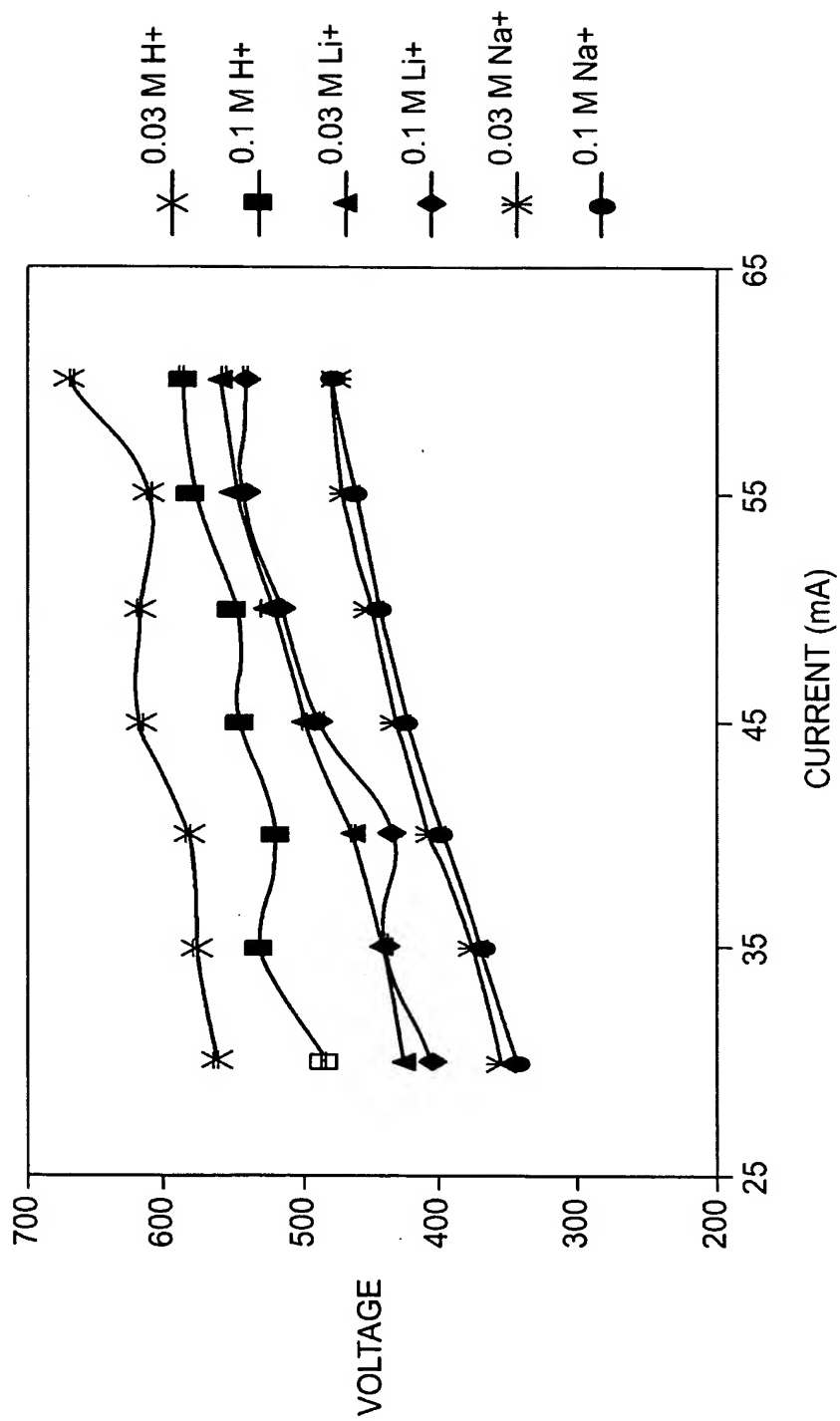


Fig. 4a

REPLACEMENT SHEET

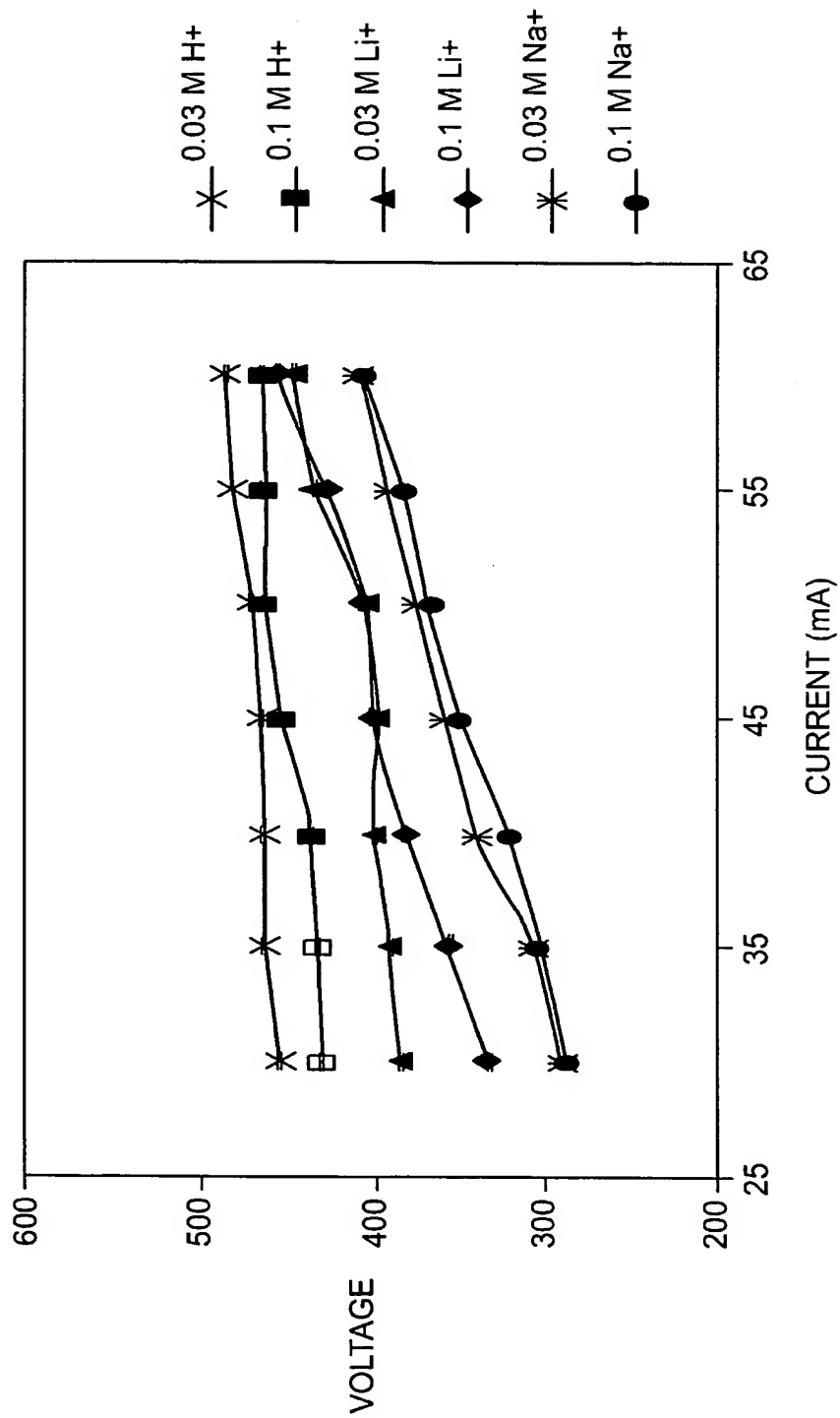


Fig. 4b

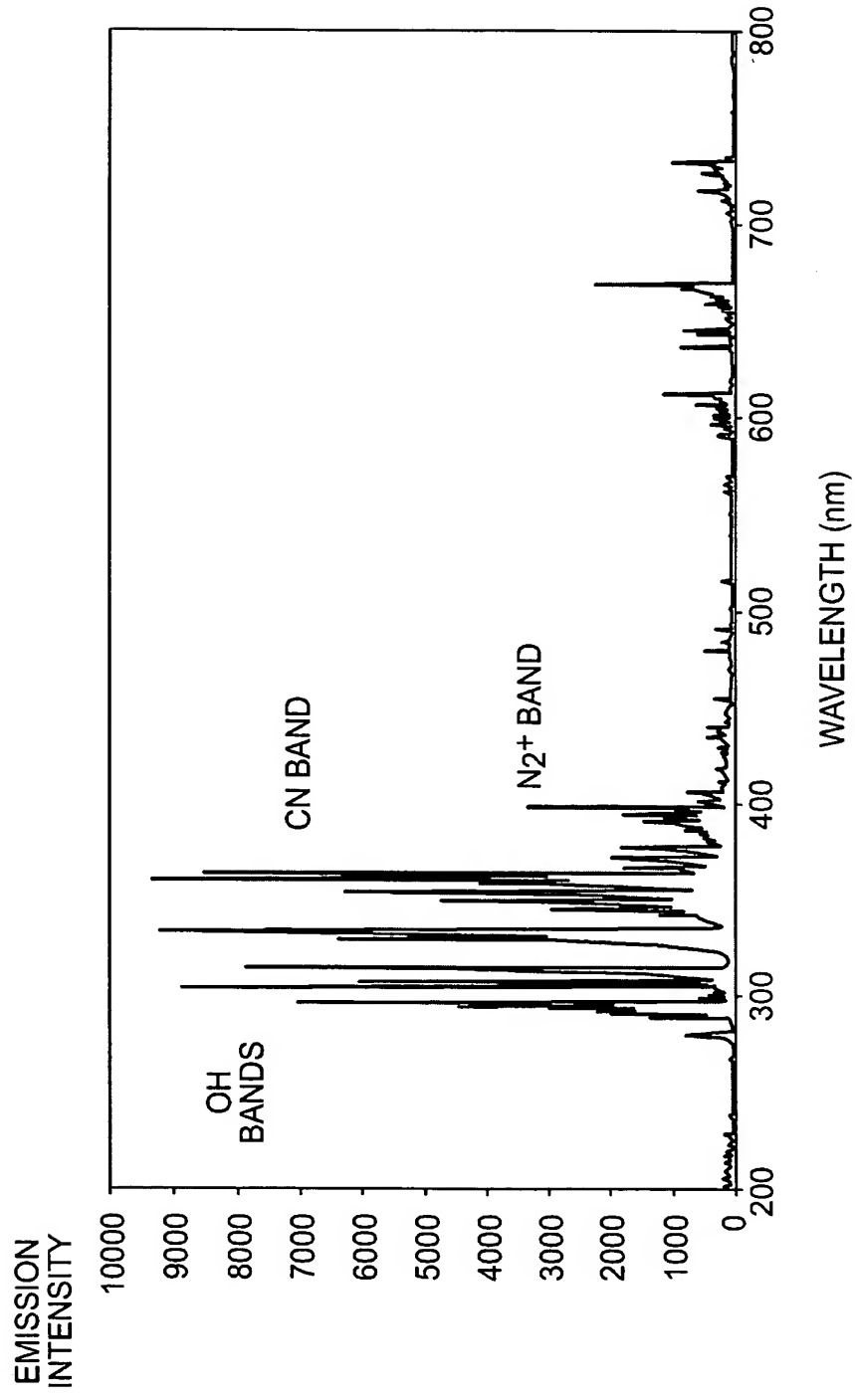


Fig. 5

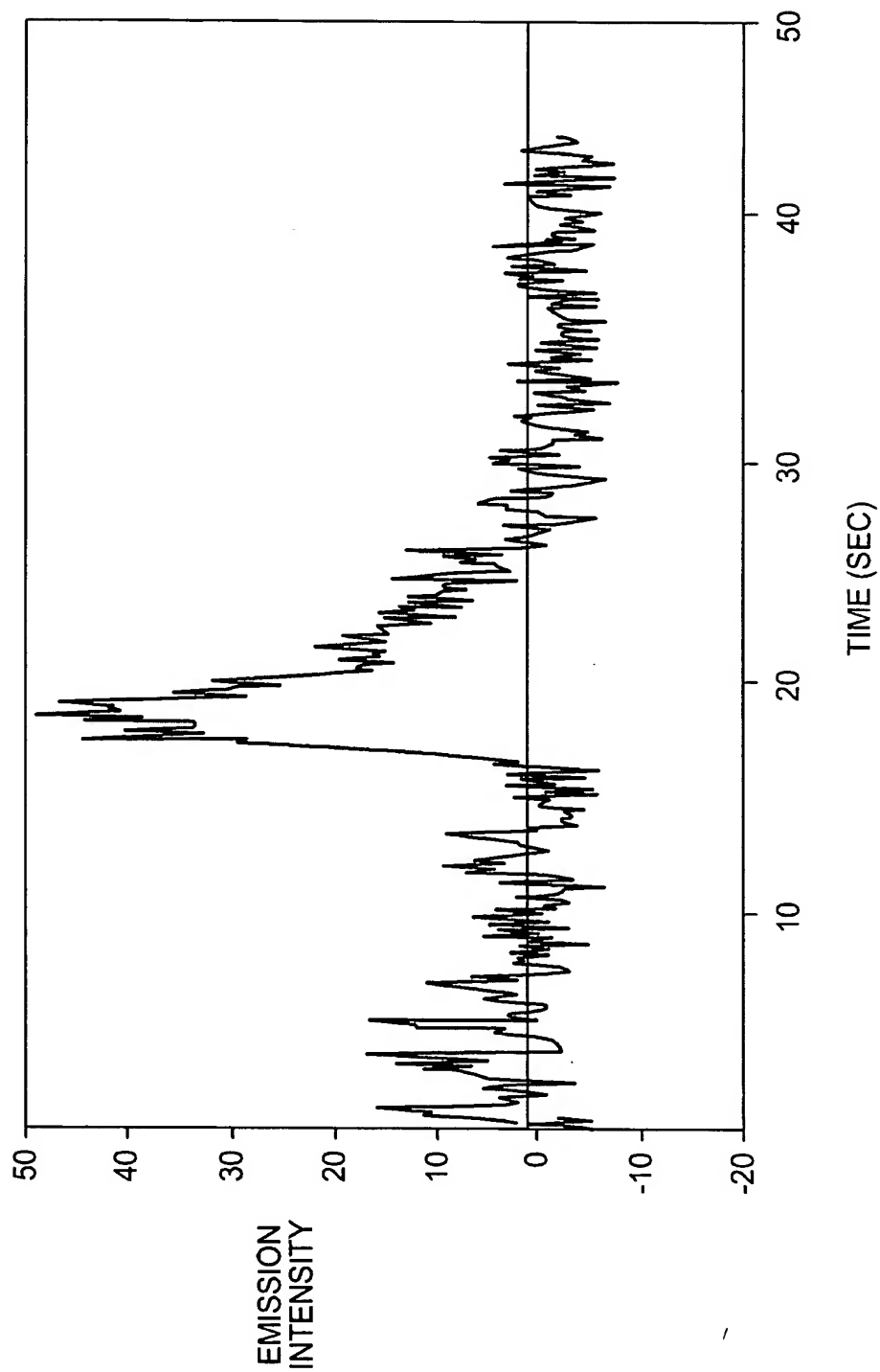


Fig. 6

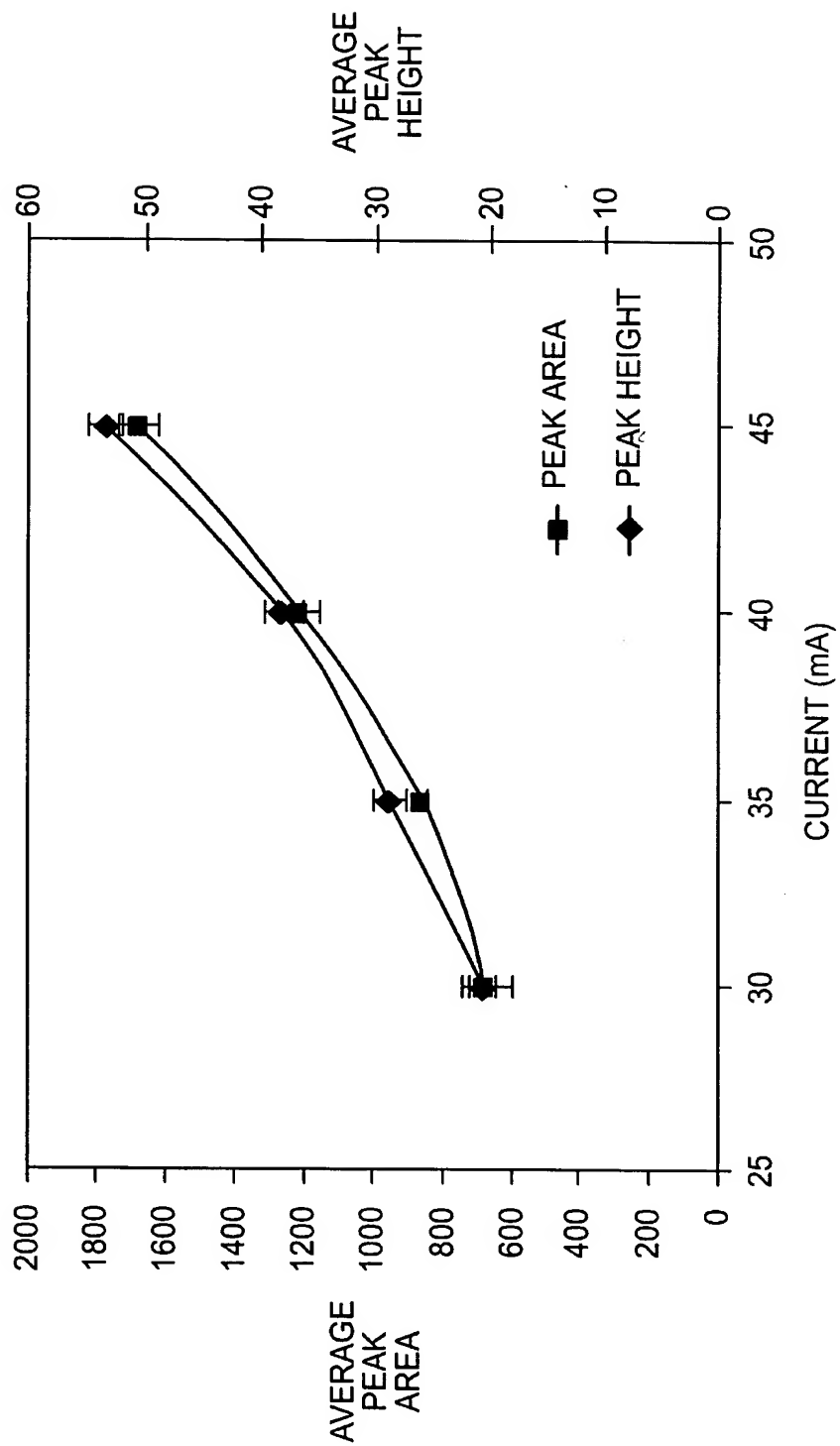


Fig. 7

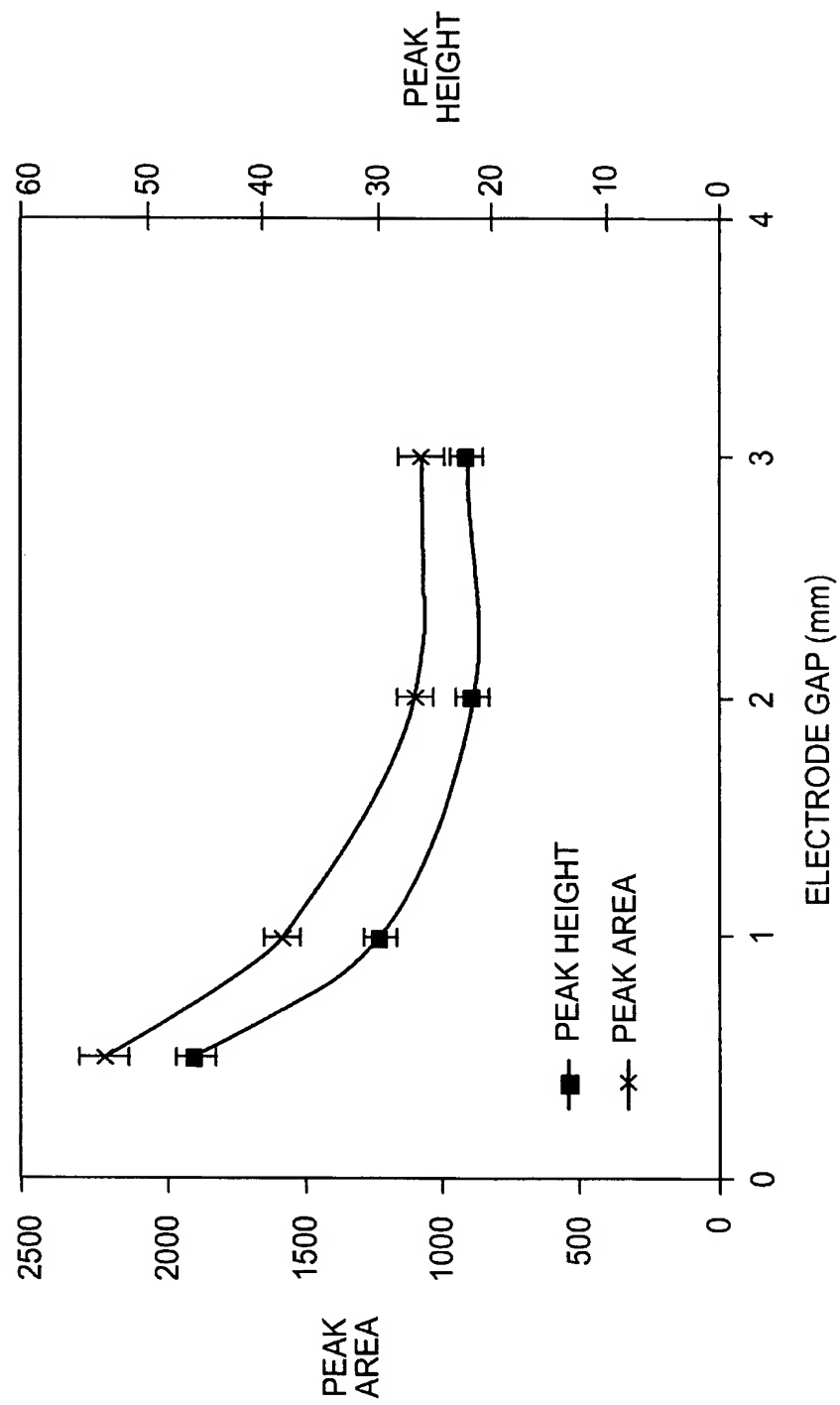


Fig. 8

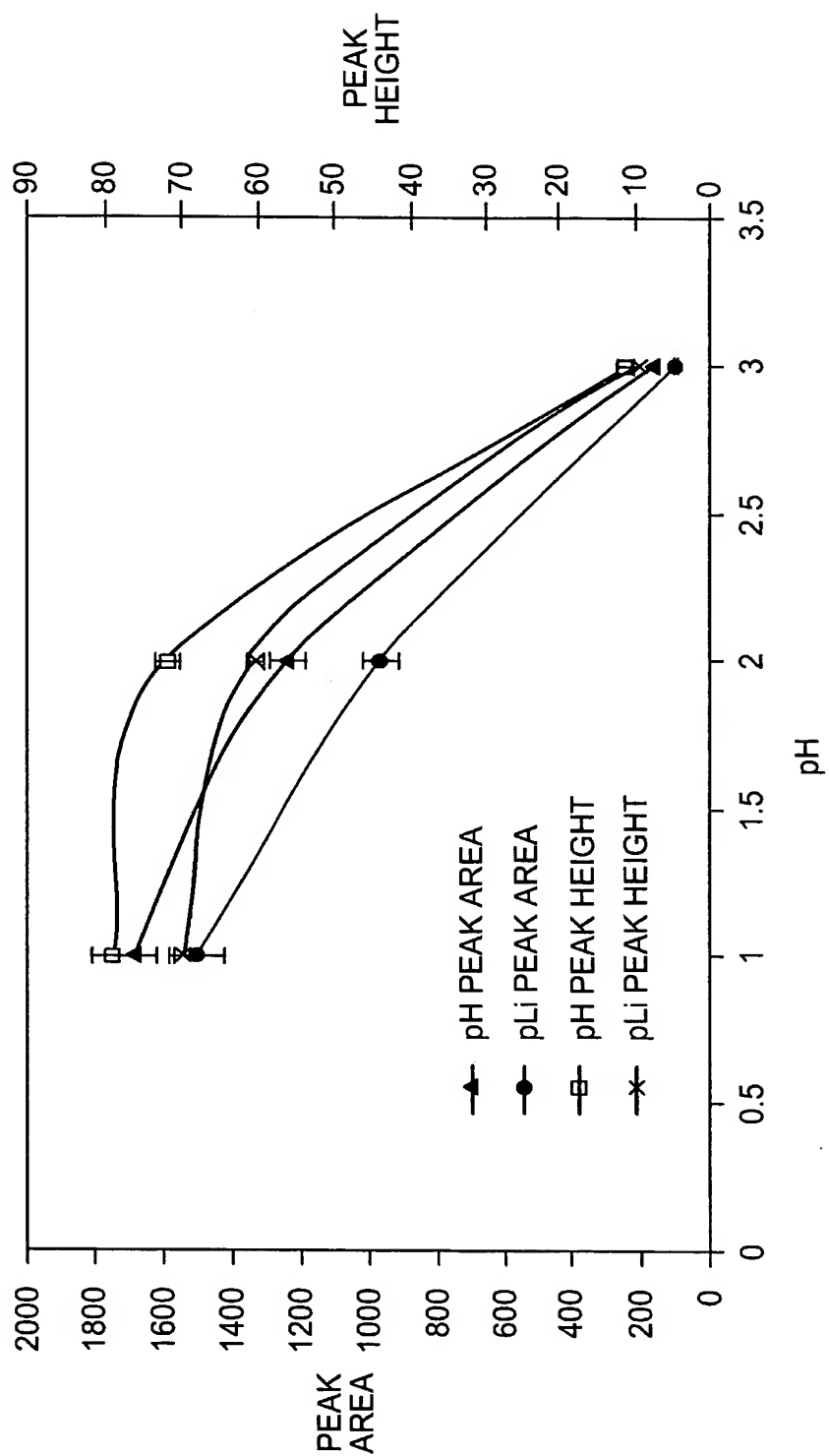


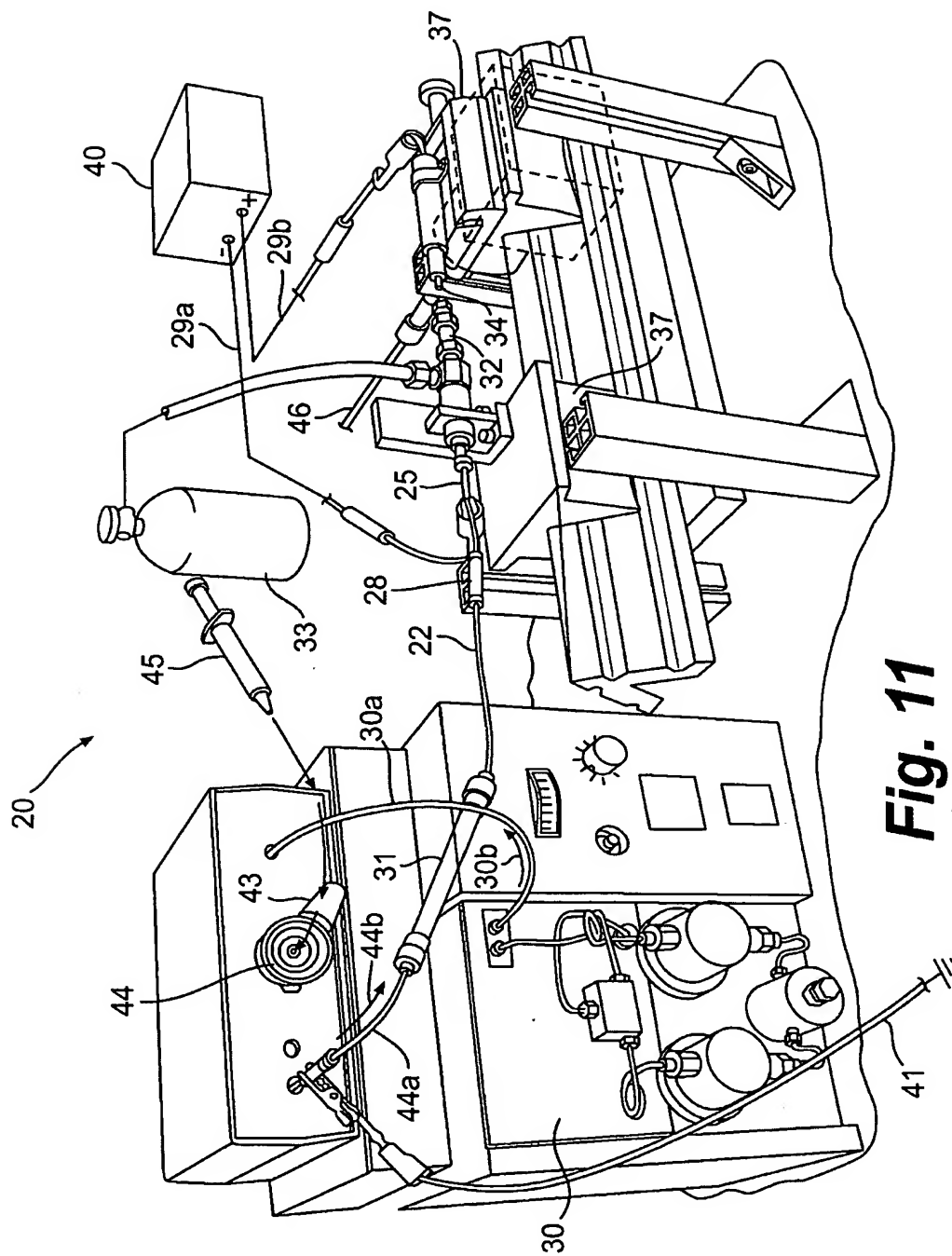
Fig. 9

REPLACEMENT SHEET

ANALYTICAL RESPONSE FUNCTIONS AND LIMITS OF DETECTION FOR THE LS-APGD DEVICE.
SOLUTION FLOW RATE = 1 mL/MIN., ELECTROLYTE pH = 1, INTER ELECTRODE GAP = 1 mm,
INJECTION VOLUME = 5µL.

| ELEMENT | WAVELENGTH (nm) | PEAK HEIGHT EQN. R ² | PEAK AREA EQN. R ² | LOD ppm (ng) |
|---------|--------------------|---------------------------------------|-------------------------------------|-----------------|
| Na | 589.0 | Y=0.421x + 42.8 0.9859 | Y=15.81x + 978.6 0.9784 | 12 (60) |
| Fe | 248.3 | Y=1.06x - 102.1 0.9365 | Y=45.80x - 6649 0.909 | 12 (60) |
| Pb | 405.8 | Y=1.18x - 10.45 0.977 | Y=16.16x - 419.7 0.9298 | 14 (70) |

Fig. 10



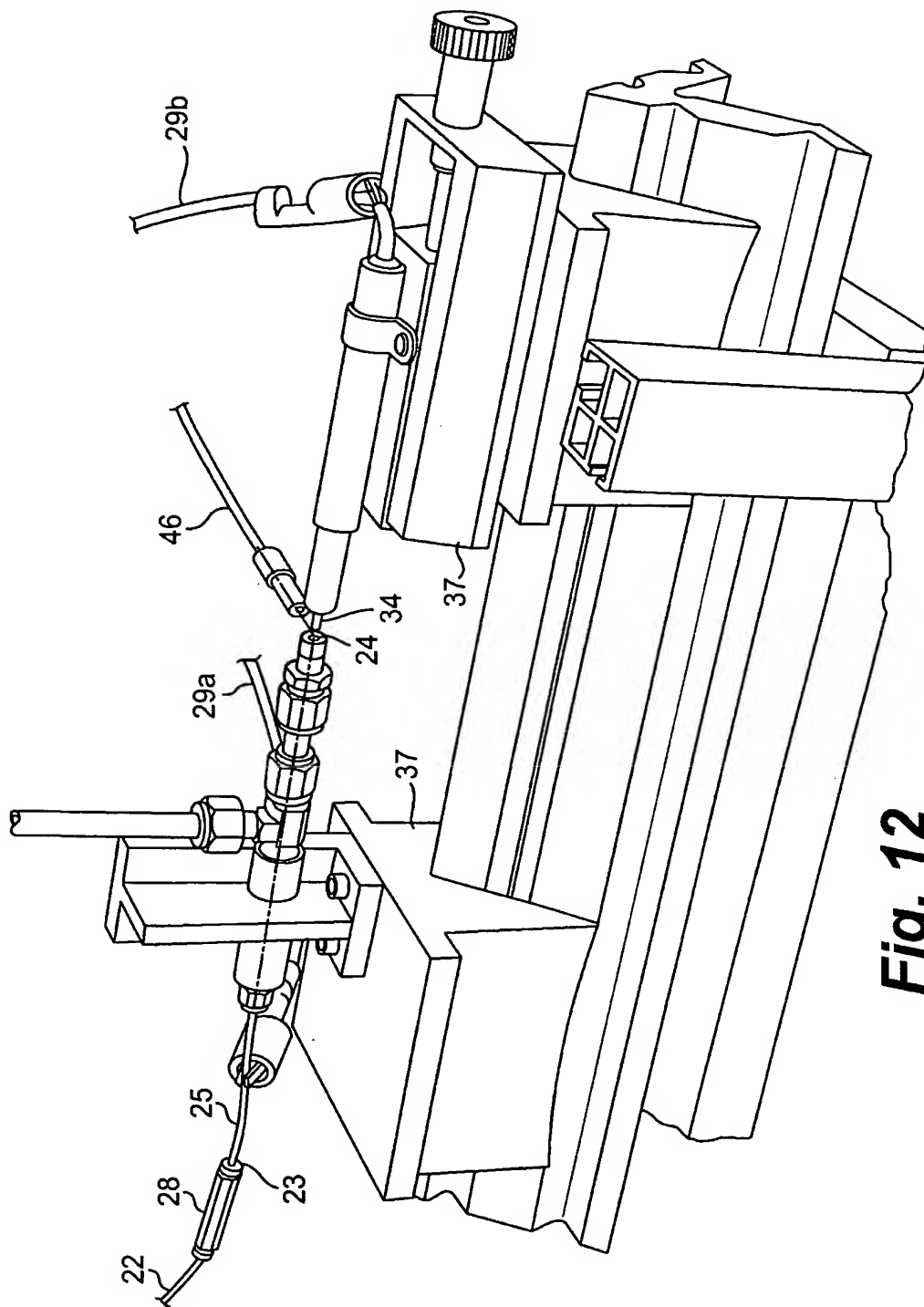


Fig. 12

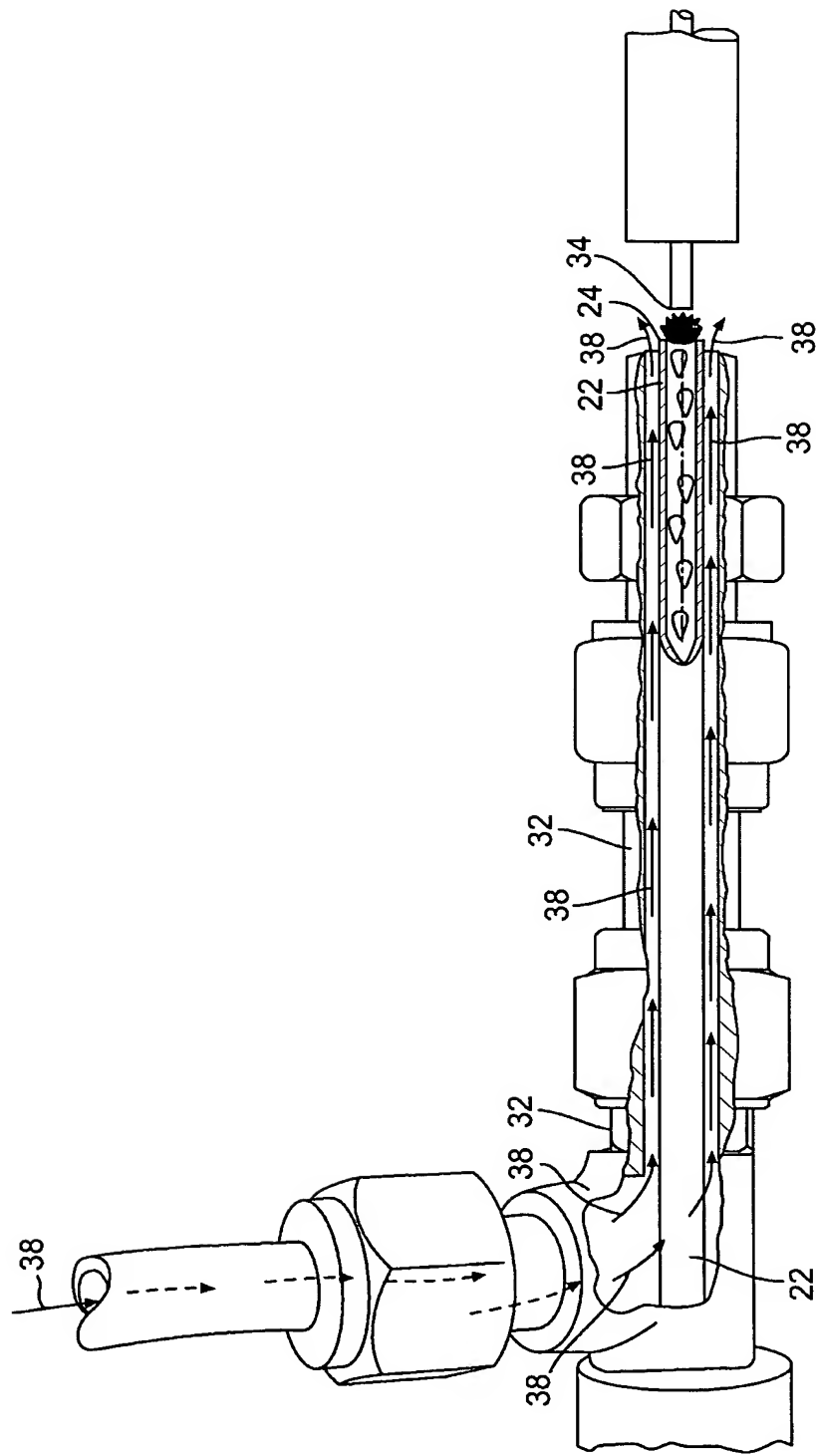


Fig. 13

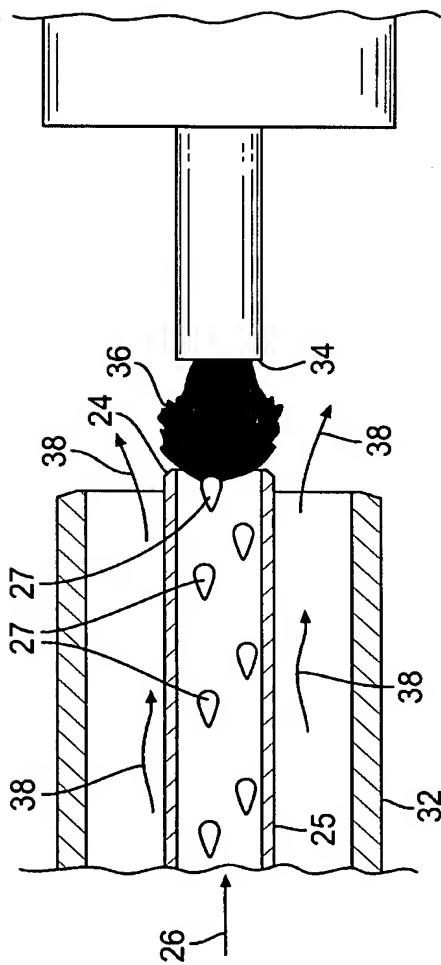


Fig. 14

Selenoamino Acid Separation

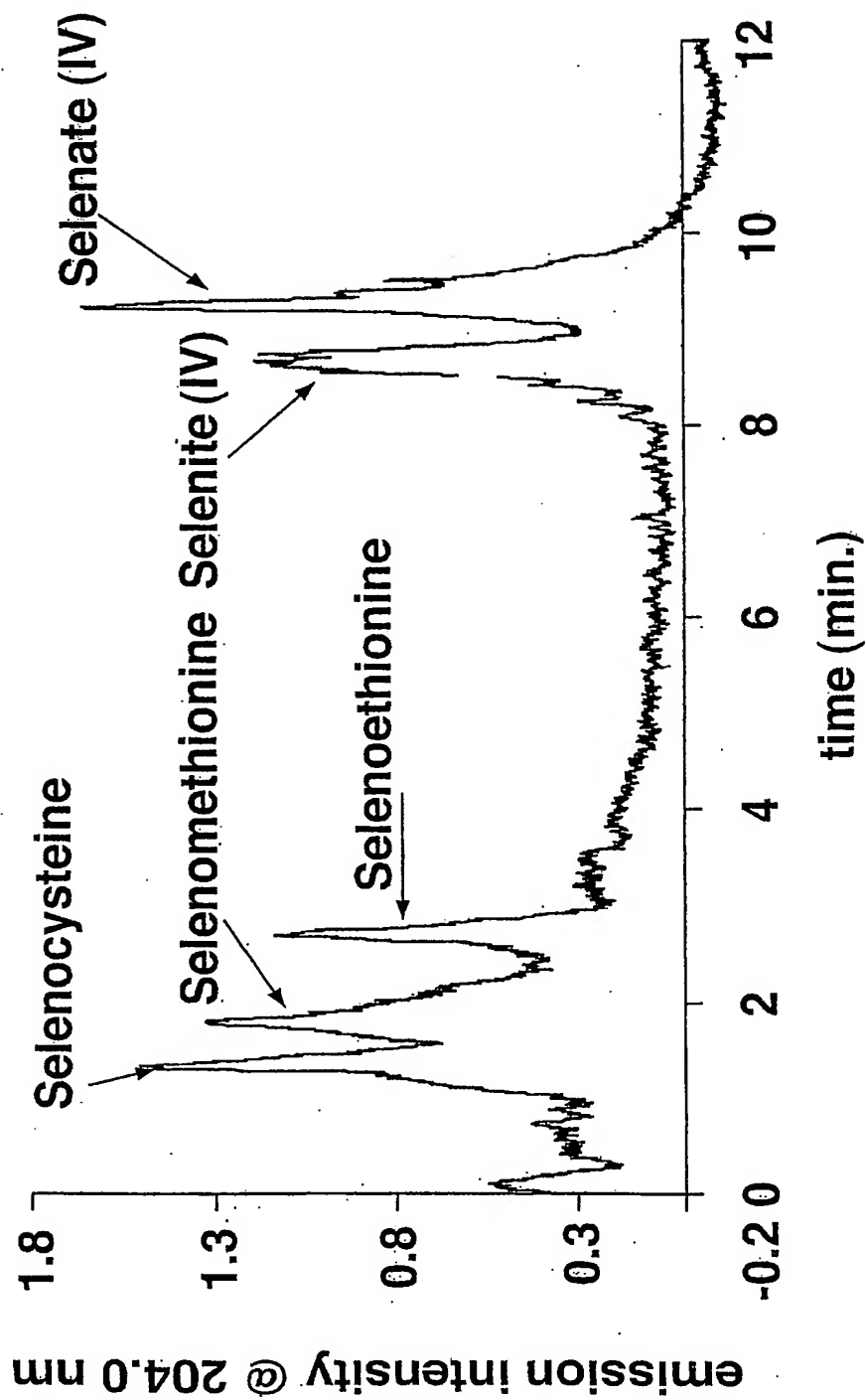


Fig. 15